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Cover Photo:
Wool carpet
Central Caucasus, 17th or 18th century
Acquired by George Hewitt Myers in 1916
TM R36.1.1
195 in (warp) x 93 in (weft)

A classic "dragon" carpet with two-tiered lattice of paired lanceolate leaves enclosing addorsed pairs of dragons and lotus blossoms. Scattered in pairs are stylized lions, ducks, pheasant, and mythical beasts with palmette blossoms and sunbursts placed at points of intersection.

Note to Contributors:

The Textile Museum Journal is devoted to the presentation of scholarship concerning the cultural, technical, historical, and aesthetic significance of textiles. The journal is international in scope with emphasis on geographic areas represented in The Textile Museum's collections: Near East, Central, South, and Southeast Asia, and South and Central America.

Authors are invited to submit manuscripts based on original research of a documentary, analytical, or interpretive nature. Articles should be both scholarly and accessible to the public.

For further information, write to Journal Coordinator, *The Textile Museum Journal*, 2320 'S' Street, NW, Washington, D.C. 20008

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The Stabilization of Edges and Ends: Gradations of Intervention

by Anne H. Ennes

In writing about the care and maintenance of Oriental rugs, W. D. Ellwanger notes, "when the selvedge is gone, and the end borders or sides of the rug itself are encroached upon and sawed by the tooth of time, more than half of the value and beauty of the piece is lost."¹ As Ellwanger so poetically states, the impact of loss or treatment on such areas can significantly alter the integrity of the carpet (fig. 1).

Selvages and ends are frequently the first areas of a rug to suffer from wear and abrasion. To slow this process, a number of repair techniques have been developed. These treatments are derived both from traditional rug finishes and commercial and museum repair practices. The following survey of techniques has been drawn from the documentation of Textile Museum collections.

Treatment of Warp Ends

When warp ends deteriorate, severe damage can occur as weft yarns, and then knots, come loose. Left unchecked, whole borders can disappear, leaving the carpet vulnerable and with an incomplete or imbalanced look. In some instances, repairs have been made by cutting the damaged area back to a straight line and then stabilizing the cut edge with stitching. In other cases, attempts have been

made to restore the end to its original form or to create a new finish. The current practice at The Textile Museum is to stabilize the rug in its present condition.

Stabilization stitches commonly employed range from a basic overcast or whip stitch, to cross stitch and blanket stitch. The method of execution can make a great deal of difference in the final result. For example, with overcasting (fig. 2), efforts are taken to minimize the impact on the face of the carpet by working the needle between columns of knots. If that degree of care is not taken, the stitch is not only quite visible, but also crushes the pile. The cross stitch (fig. 3) subjects the rugs to twice the manipulation of overcasting. It is usually quite apparent from the face of the carpet, and with improper tension can cause the ends to curl.

The blanket stitch (figs. 4a, 4b) is most often done with the loop positioned at the fringe edge. Though there are no examples of the opposite orientation of this stitch in the Museum's collection, research suggests this version also is used.² Another version of the blanket stitch, the Antwerp Edge Stitch (fig. 5), is mentioned by Peter Stone in *Oriental Rug Repair*.³ Although this is a durable stitch secured from possible unraveling by half-hitches tied where loops intersect, each knot site could create points of stress and cause eventual deterioration of the carpet.

Two techniques which have been frequently used at The Textile Museum are the ladder stitch and couching (figs. 6a, 6b). The ladder stitch, basically invisible from the front, secures the last rows of weft by tunneling through the backs of knots, whipping over the edge, and tunneling back up through the knots, usually over two warps. Because of the very invasive nature of this stabilization technique, a great deal of skill is required to execute the stitch. In addition, the thread must be relatively thin compared to the yarns of the rug, or stresses can be set up within the columns of knots with the addition of the sewing thread through the rug's structure. This stitch may not be an appropriate option for rugs with aged and brittle fibers.

Couching stitches usually incorporate various support fabrics or tapes. While this technique generally does not improve the visual appearance of the rug, couching successfully secures loose yarns and offers some stability in handling. As with the ladder stitch,

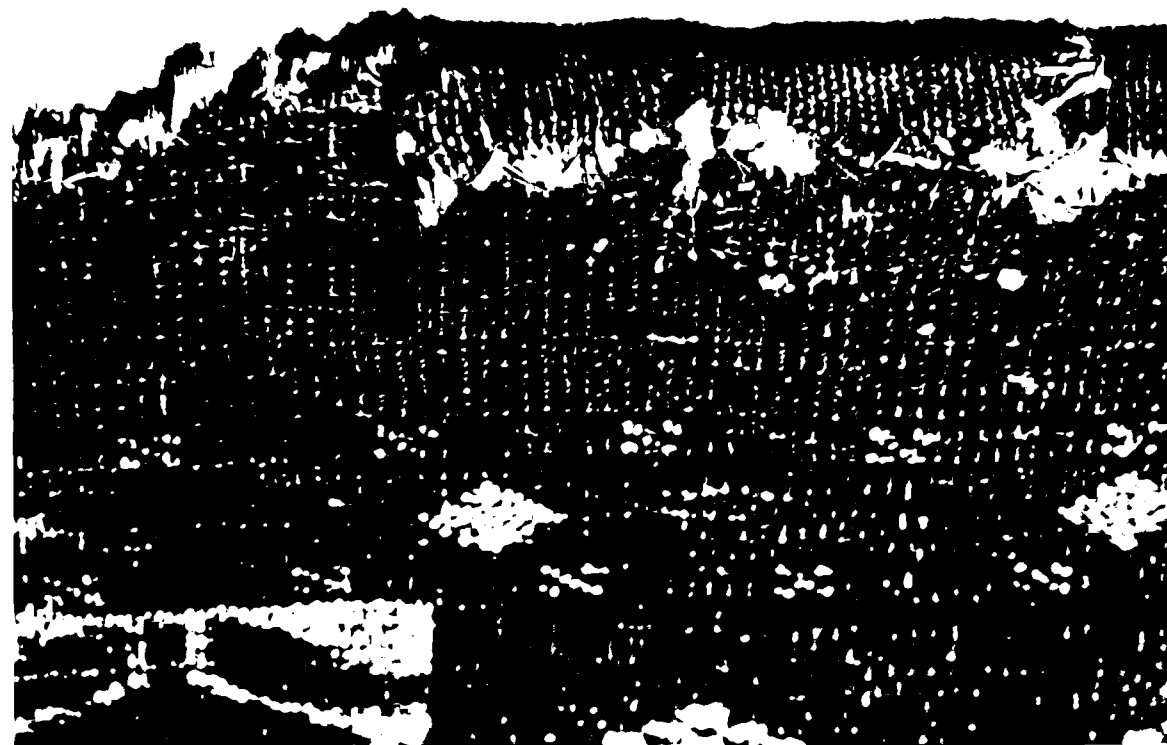


Fig. 1. The loss of warp, weft, and knots not only destroys the visual aesthetic, but also significantly alters the integrity of a rug.

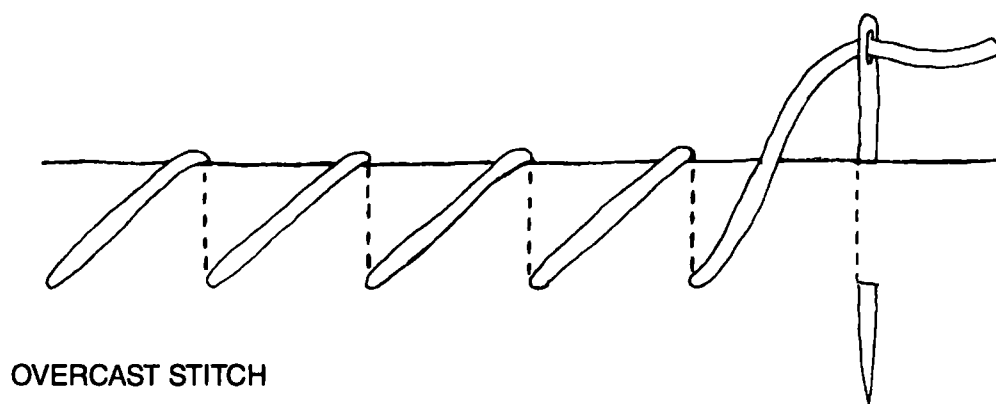


Fig. 2. Overcasting stitches, if carefully executed between columns of knots, can be nearly invisible on the face of a rug.

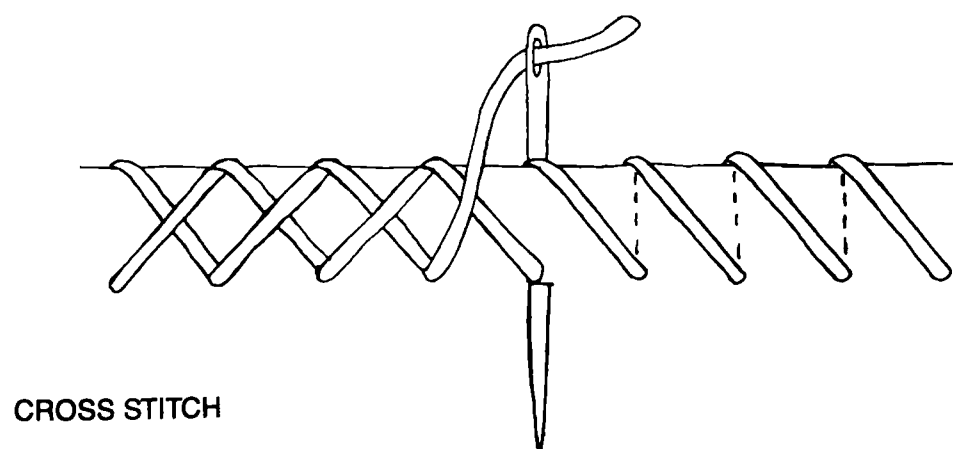


Fig. 3. Cross stitches are very visible when used to stabilize the end of a rug.

Fig. 4a. The blanket stitch is usually done with the loop positioned at the fringe edge.

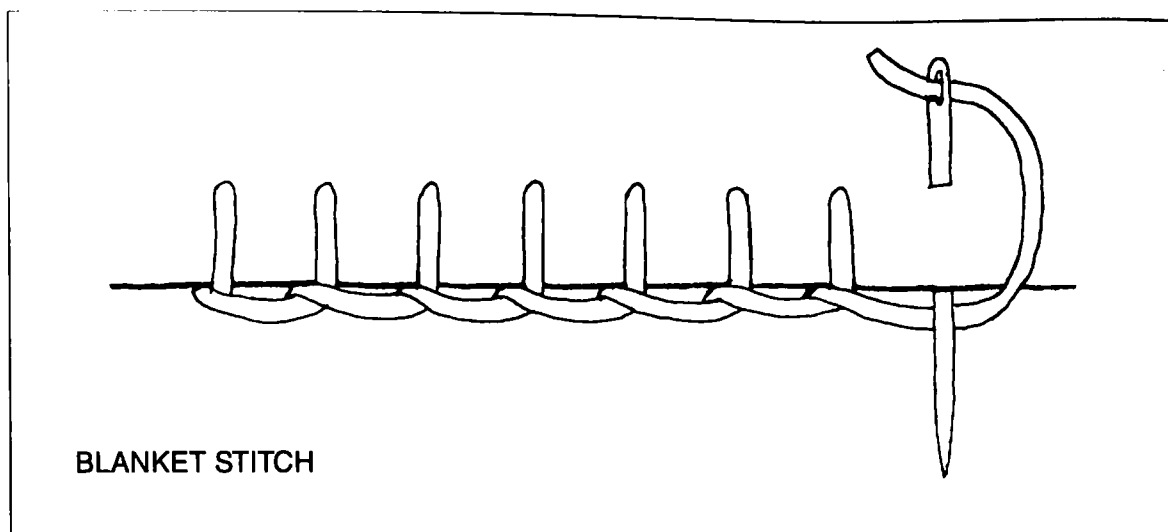


Fig. 4b. Sometimes the blanket stitch is executed in the opposite direction.

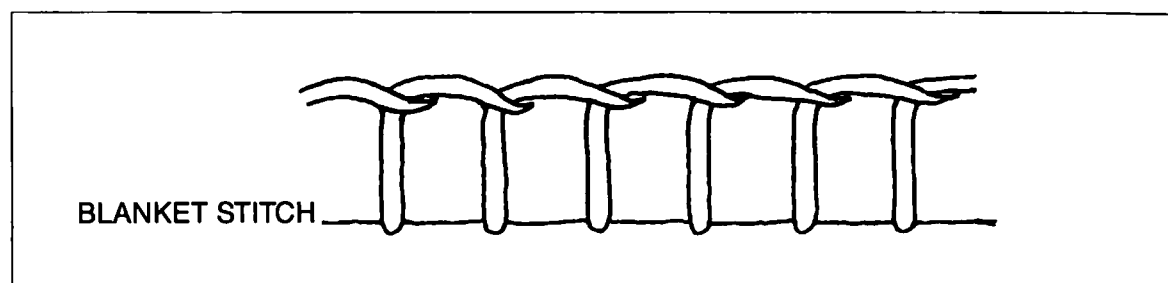


Fig. 5. The Antwerp edge stitch is very durable, but the knot sites could create points of stress on the back of the rug.

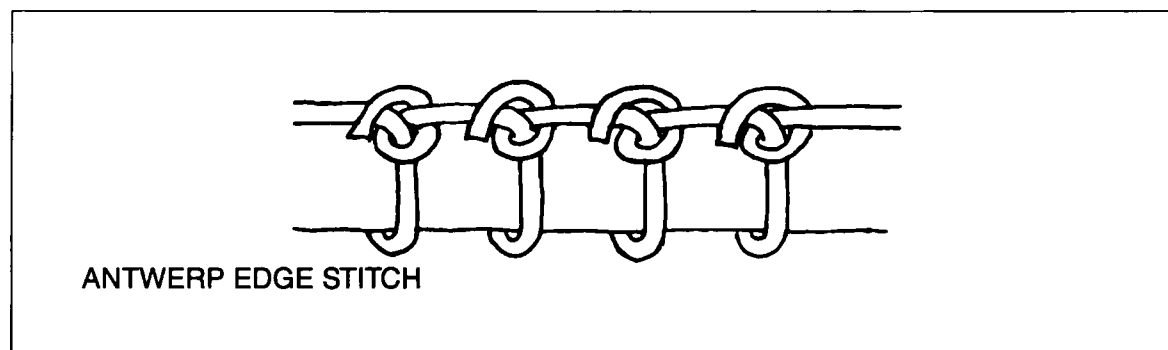
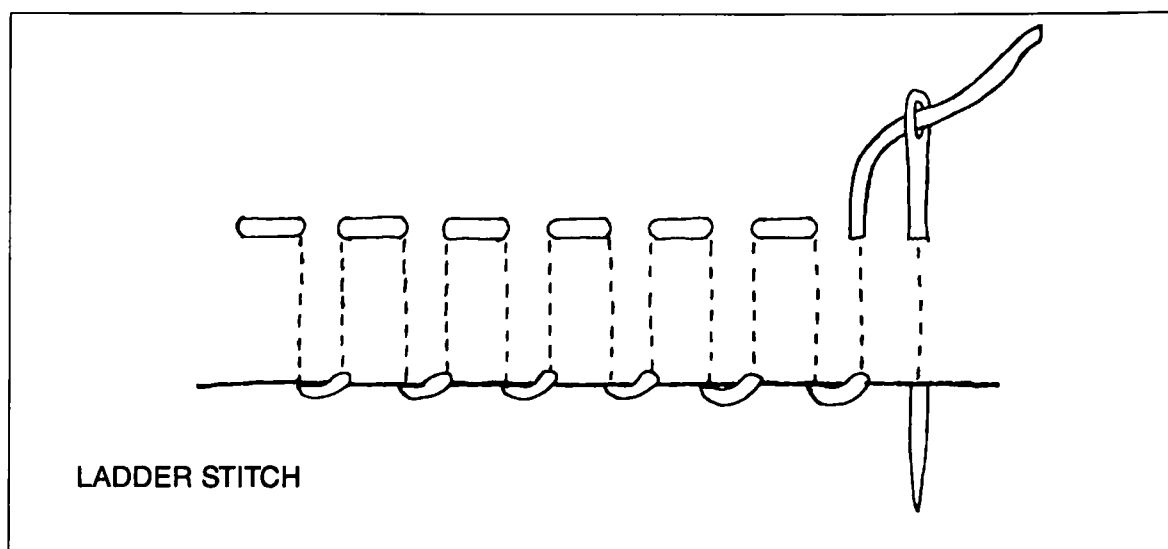
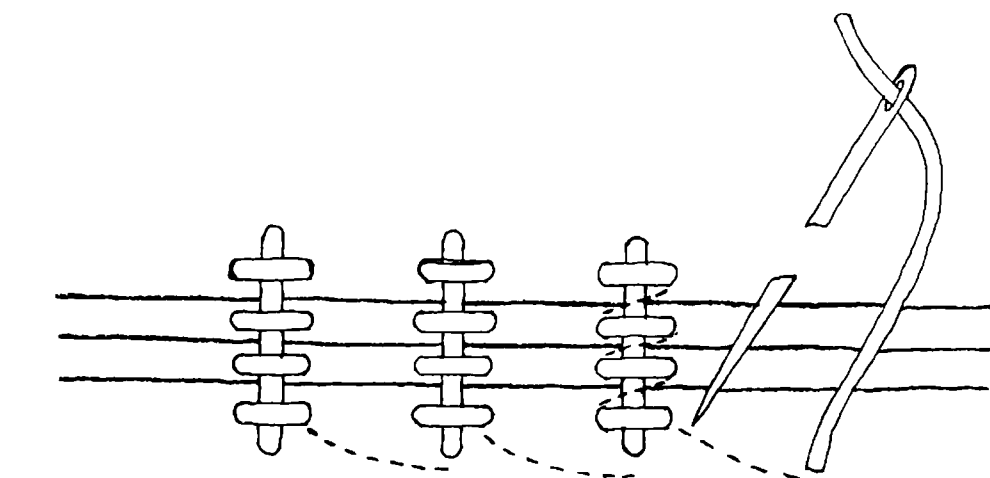


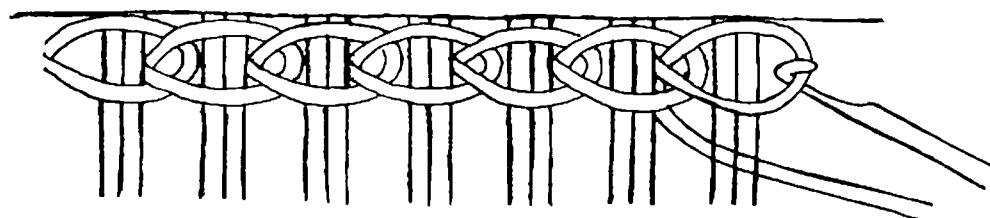
Fig. 6a. The ladder stitch is a secure and invisible end treatment for a rug in sturdy condition.





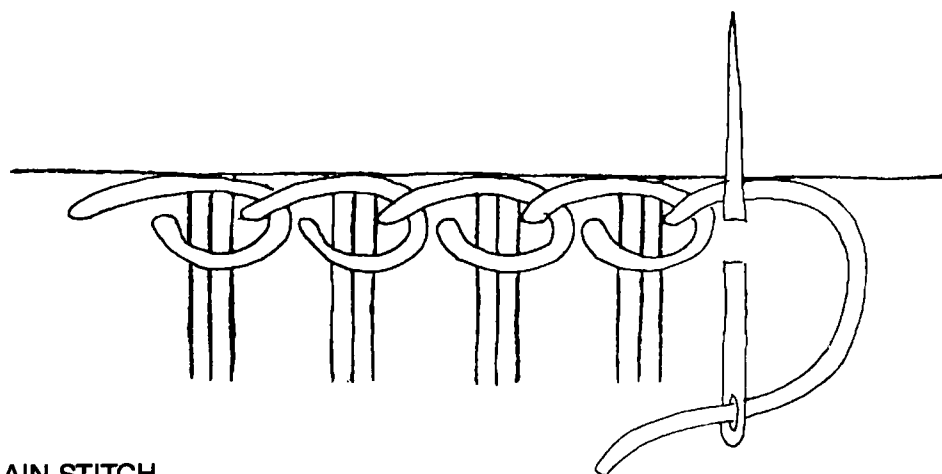
COUCHING STITCH

Fig. 6b. Couching is sometimes more appropriate for fragile yarns when an additional support fabric is required.



CHAIN STITCH

Fig. 7a. The chain stitch has been used as a traditional finish for rugs.



CHAIN STITCH

Fig. 7b. The chain stitch has also been used as a method of stabilizing the warp ends.

couching is time-consuming and requires a degree of skill. In addition, the choice of these two stitch techniques will depend not only upon the condition of the piece but on how it will be used or displayed.

Two other stitches encountered during this survey are the chain stitch and an interlock stitch. The chain stitch (figs. 7a, 7b) is a common, decorative end-finish sometimes used in carpet production. Whether done with a crochet hook or a needle, the chain stitch is easy to execute and just as easy to remove if at a later date another treatment becomes necessary. The stitch has a different visual appearance from the front to the back (figs. 8a, 8b) and can be worked according to the desired result. Proper tension and correct thread are essential to successfully lock in the wefts and withstand general handling (fig. 9). While the chain stitch is less time-consuming to execute than some other stitches, the edge of the rug must be even and the fringes long enough for the chain to stay in place.

The interlock stitch (fig. 10) is similar to couching stitches, except that the "laid" thread is placed on the back of the object and is not fastened down in a straight line. While this stitch requires a certain amount of skill and coordination, it has the advantage of being durable and does not pierce any of the yarns of the rug. Because the sewing threads form diagonal lines on both the front and back of the rug, this technique is most appropriate to stabilize flat woven ends; the diagonal thread would tend to crush the knots of a pile rug.

Treatment of Selvedges

Less variety seems to exist in the treatment of selvedges, but to quote Ellwanger again, "selvedge is of slight importance, but, like a woman's skirts or a man's trousers, it is unforgivable if worn or frayed";⁴ unforgivable perhaps, in that the deterioration of selvedges invites further and more extensive damage.

If signs of wear are noticed early on, then new overcasting or figure-eight wrapping (fig. 11) are usually the first treatments undertaken. The choice of technique depends on the number of selvedge cords — overcasting covers only one cord, but the figure-eight wrap can accommodate two or more.

When left unprotected, selvedge warps can eventually break, paving the way for damage to the rug's structure and making further treatment necessary. As a more preventative rather than necessary measure, sometimes machine stitching is found coupled with overcasting and wrapping. For example, there is the "Fred Harvey" method (fig. 12) which is used to stabilize Navajo rugs and occasionally Oriental rugs. This method, which enjoyed popularity in the early 1900s, consists of a line of machine stitching which secures wefts and runs parallel to the damaged edge. The edge is then heavily overcast to just beyond this line.⁵

In some cases, the selvedge is cut back to a straight line — to a location where there is a complete, undamaged warp extending the length of the rug — and a new selvedge is created. This can be the simple addition of a manufactured tape, or the attachment of an entire woven border taken from another rug.

Less intrusive techniques found within The Textile Museum's collection include couching with added support fabrics, and the use of figure-eight stitches to secure loose and dangling selvedge cords. With an appropriate weight of thread, the figure-eight stitch can be almost invisible, yet quite secure.

Within the museum context, the conservator's priority is stabilization of the piece. While some of the stabilization techniques do not answer aesthetic concerns, it is possible, for example, to use a yarn that matches the color of the original in completing the figure-eight stitch, thus blending the stabilized area with the undamaged areas.

Finishing Treatments for Fragments

The edges of rug fragments are frequently stabilized with cloth tapes which have been sewn to the cut edge and turned to the back. Self hems and bindings with cloth and yarn are also common techniques applied to fragments as well as selvedges and warp ends in an attempt to achieve a straight, "exhibitable" edge. It is not uncommon to find a turned edge (self hem) brought to the front rather than the reverse as a traditional carpet end finish.



Fig. 8. The chain stitch has a different appearance from the front (a) to the back (b) and can be worked either way, depending on the desired visual effect.

Conclusion

With any end or selvedge treatment, it is necessary to ask the following questions: 1) is the treatment actually necessary to stabilize the object (fig. 13); 2) will the chosen treatment effectively stabilize the piece; 3) will the treatment hold up under foreseeable conditions of use; and 4) is the treatment

aesthetically appropriate? Using careful stitching and appropriate threads and yarns, the goal of the treatment of edges and ends should be a durable, effective, and aesthetically pleasing repair which uses the least intrusive technique possible.

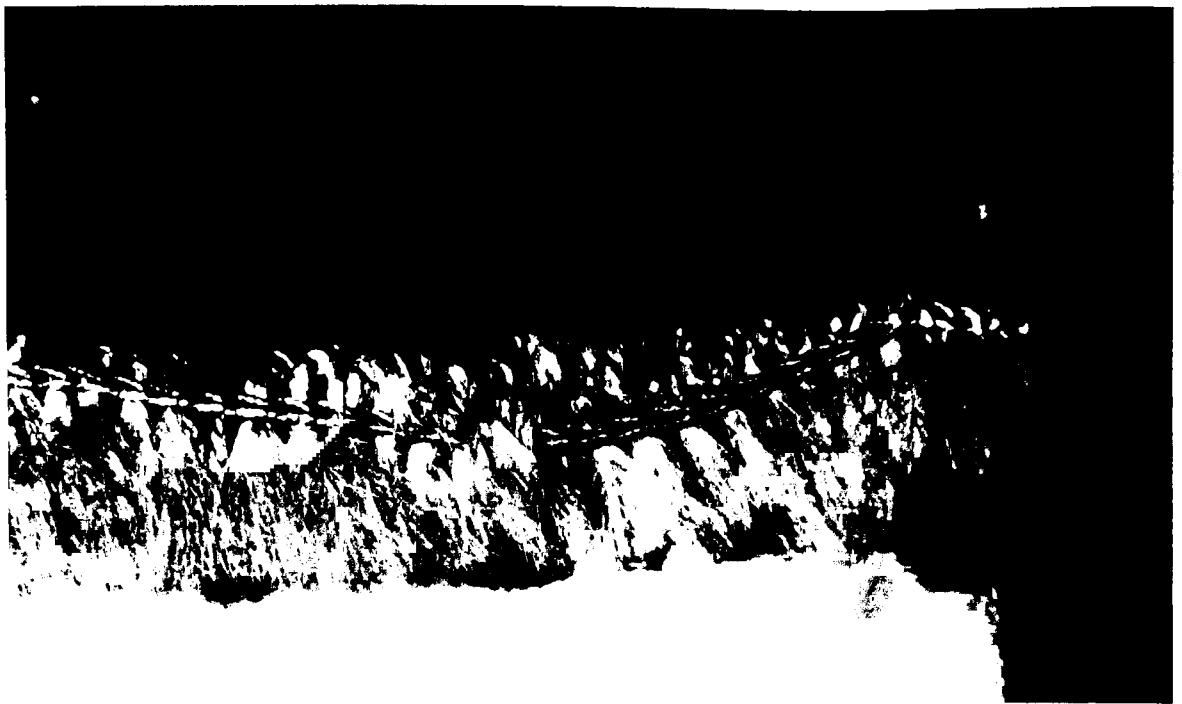


Fig. 9. The chain finish was worked in a slippery, waxed linen thread on this rug, which did not stay in place. An unwaxed thread and a slightly tighter tension would have been more appropriate.

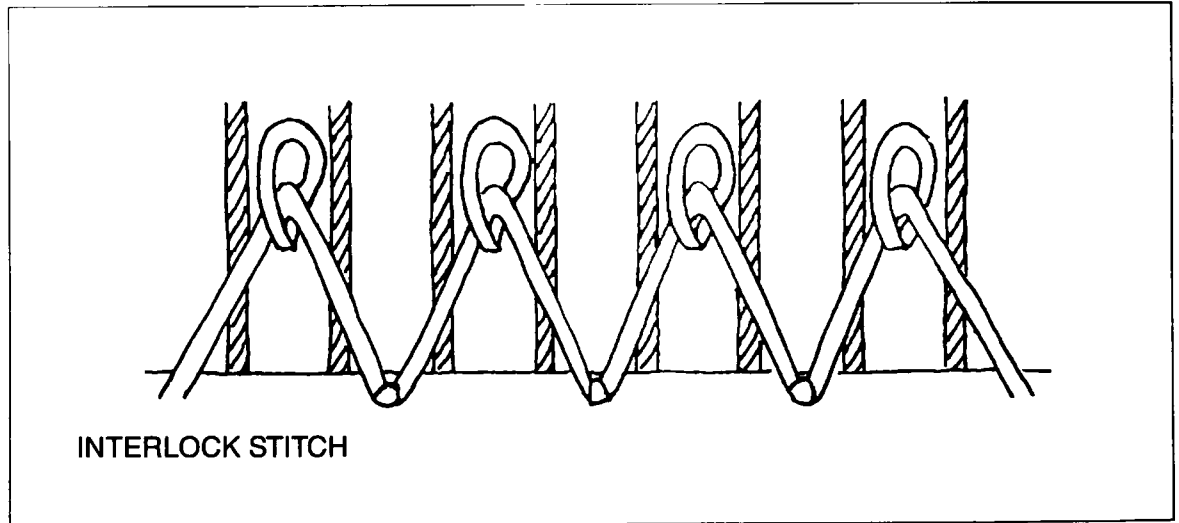


Fig. 10. The interlock stitch has the appearance of a machine-made zig-zag stitch, but it is actually a variation of couching where the "laid" thread is placed on the back.

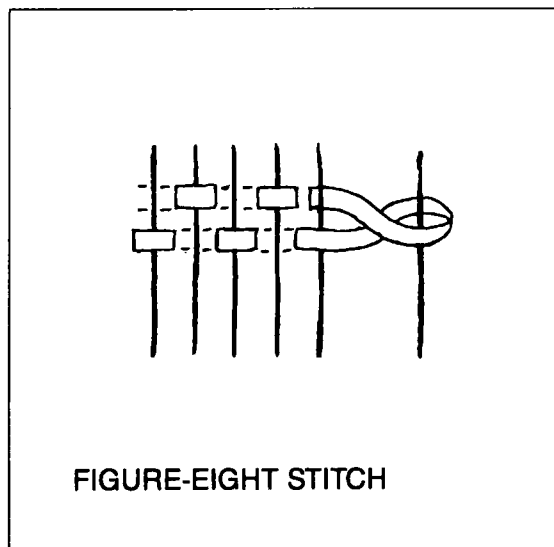


Fig. 11. Figure-eight wrapping is one of the first treatments undertaken when the selvages begin to fray.

Fig. 12. The "Fred Harvey" method of stabilizing the edge of Navajo rugs is a very intrusive technique that uses a combination of machine and hand stitching.

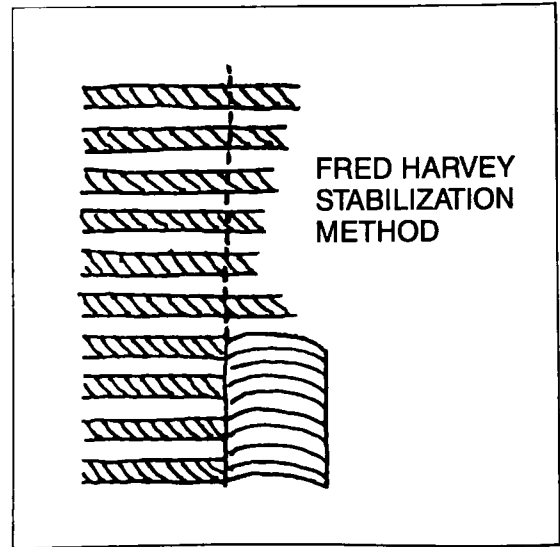




Fig. 13. It was unnecessary to add a blanket stitch to this rug which has its original end finish in good condition. The thread used to execute the blanket stitch was not of good quality, and it has already broken and begun to deteriorate.

About the Author

Anne Ennes received her B.S. degree in Textiles and Clothing from Hood College. She undertook apprenticeship training in textile conservation from Fonda Thomson and Jane Merritt, and she is currently Assistant Conservator for Collections at The Textile Museum.

Notes

1. W. D. Ellwanger, *The Oriental Rug* (New York: Dodd, Mead and Company, 1903), 136.
2. Peter Stone, *Oriental Rug Repair* (Chicago: Greenleaf Co., 1981), 113.
3. Ibid.
4. Ellwanger, *The Oriental Rug*, 136.
5. Noel Bennett, *Navajo Weaving Restoration Workshop* (Corrales, N.M.: Shared Horizons Foundation, 1986), 31.

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Benardout, David. *Care and Repair of Rugs and Carpets*. London: Ebury Press, 1987.

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